

# **VTS Houston/Galveston**

## **A Brief History**

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## **INTRODUCTION**

While it is imperative that we know how to execute our mission, it is equally important to understand what got us to where we are. Keeping in mind our history and the mishaps that occurred that helped form the way we do things, will better enable us to see developing situations, thus allowing us to be more proactive so that we minimize the opportunity for previous situations to repeat themselves.

This paper discusses the events that occurred and the resulting laws and regulations that established the Vessel Traffic Service program, and thus VTS Houston/Galveston

## **PRE VTS DAYS**

The concept of monitoring ship movements through a shore-side radar station is generally accepted to have first appeared in the port of Liverpool in 1949. In 1956, the Netherlands established a system of radar stations for the surveillance of traffic at the port of Rotterdam. As VTS evolved and spread in Western Europe, the commercial well being of the port was the stimulus for new or expanded service.

U.S. Concerns regarding vessel movements were first brought to light during The Cold War. The Magnuson Act of 1950 authorized the president to: "...govern the anchorage and movement of any foreign flagged vessels in the territorial waters; inspect such vessels at any time; safeguard against destruction, loss or injury from sabotage or other subversive acts, accidents, or other causes of similar nature, vessels, harbors, ports, and waterfront facilities ... subject to the jurisdiction of the United States ...".

The first Federal (Coast Guard) VTS was an outgrowth of a 1968 research and development effort in San Francisco Bay called Harbor Advisory Radar Project (HARP). It was, as the name suggests, an advisory activity and participation in the system was voluntary. Because it was voluntary, not all vessels availed themselves of the assistance or contributed to the service.

On January 18, 1971, the tankers Arizona Standard and Oregon Standard collided in San Francisco Bay under the Golden Gate Bridge, releasing 800,000 gallons of bunker C fuel. The collision occurred at 0141 during low visibility. The National Transportation Safety Board (NTSB) attributed the cause to the following:

- Failure of both vessels to establish /maintain communications,
- Navigating a narrow channel in dense fog,
- Failure of the Oregon Standard to make timely radar contact
- Loss of radar contact by the Arizona Standard, and
- Negligence on the part of both masters.

The incident received nationwide attention and resulted in two significant maritime safety related legislations:

- The Bridge to Bridge Radiotelephone Act (Title 33 USC §1201, 33 CFR 26) and
- The Ports and Waterways Safety Act of 1972 (PWSA) (Title 33 USC §1221).

It is from the latter that the Coast Guard draws its authority to construct, maintain and operate VTSs. It also authorizes the Coast Guard to require the carriage of electronic devices necessary for participation in the VTS system.

## **PORTS AND WATERWAYS SAFETY ACT OF 1972 (PWSA)**

The purpose of the act was to establish good order and predictability on United States waterways by implementing fundamental waterways management practices. Using the PWSA as the authority and the San Francisco Harbor Advisory Radar Project as the operational model, the Coast Guard began to establish VTSs in critical, congested ports. San Francisco was formally established along with Puget Sound (Seattle) in 1972. Louisville, KY which is only activated during high water in the Ohio River (approximately 50 days per year) was started in 1973; Houston-Galveston, Prince William Sound; Berwick Bay (Louisiana) and the St. Mary's River at

Sault Ste Marie, MI. New Orleans and New York provided services on a voluntary basis throughout the 1970-80's, however; these operations were curtailed in 1988 due to budgetary restraints, and, brought back on-line subsequent to the EXXON VALDEZ disaster, when the Coast Guard was mandated by the Oil Pollution Act of 1990 to make participation mandatory at existing and future VTSs.

At 1300 on July 19, 1972 RADM J.D. McCubbin, Commander of the Eighth Coast Guard District, called to order the first meeting of the Houston Vessel Traffic System Advisory Committee, their charter was to:

- “Represent the Houston maritime community in a cooperative planning effort with the U.S. Coast Guard,

- Review the progress of development, installation and operation of the system, and

- Advise and assist the Coast Guard in:

- Determining system characteristics, particularly with regard to system operations and to meet the unique problems posed by this waterway.

- Education of system users.

- Publicize system implementation.

- Determine system effectiveness.”

The membership of the committee was comprised of the Captain of the Ports of Galveston and Houston, presiding officers from the local Pilot Associations, General Manager of the Galveston Wharves, Deputy Director of the Port of Houston Authority, representatives from Inland Towing companies, U.S. Coast Guard Auxiliary, and various other maritime associations and interests.

On February 4, 1975 at 1400 VTS Houston-Galveston was commissioned, providing advisory service from the Sea Buoy to the Houston Turning Basin, including the Ports of Galveston and Texas City and the segment of the GICW that crosses the Houston and Texas City Channels. Participation in the VTS was voluntary.

## **PORT AND TANKER SAFETY ACT OF 1978 (PTSA)**

At approximately 0600 on December 15, 1976, the Liberian tanker Argo Merchant went aground on Fishing Rip, 29 nautical miles southeast of Nantucket Island, Massachusetts, in high wind and 10 foot seas. The vessel was carrying 183,000 barrels of No. 6 fuel oil. On December 21 the vessel broke in half aft of the kingpost, spilling approximately 36,000 barrels of cargo into the sea. The bow section split forward of the bridge and capsized on December 22, resulting in the loss of the remaining cargo.

This incident resulted in the Port and Tanker Act of 1978 (PTSA), which amended the PWSA by authorizing the Secretary of the department under which the Coast Guard operates to: “in any port or place under the jurisdiction of the United States, in the navigable waters, or in any area covered by international agreement, establish, operate and maintain vessel traffic services, consisting of measures for controlling or supervising vessel traffic or for protecting navigation and the marine environment...”. Additionally it authorized the Secretary to “require vessels which operate in an area of a vessel traffic service to utilize or comply with that service” as well as, install and use specified equipment necessary to comply with a vessel traffic service. The PTSA also gave the Secretary the “Special Powers” to: “...order any vessel to operate or anchor in a manner to which the he directs...”

## **OIL POLLUTION ACT OF 1990 (OPA 90)**

On March 24, 1989, shortly after midnight, the oil tanker Exxon Valdez struck Bligh Reef in Prince William Sound, Alaska, spilling more than 11 million gallons of crude oil. The spill was the largest in U.S. history. The size of the spill and its remote location, accessible only by helicopter and boat, made government and industry efforts difficult and tested existing plans for dealing with such an event.

In the aftermath of the Exxon Valdez incident, Congress passed the Oil Pollution Act of 1990, which required the Secretary (under which the Coast Guard operates to:

- (1) STUDY - conduct a study:
  - (A) of whether the Secretary should be given additional authority to direct the movement of vessels on navigable waters and should exercise such authority; and
  - (B) to determine and prioritize the United States ports and channels that are in need of new, expanded, or improved vessel traffic service systems, by evaluating--
    - (i) the nature, volume, and frequency of vessel traffic;
    - (ii) the risks of collisions, spills, and damages associated with that traffic;
    - (iii) the impact of installation, expansion, or improvement of a vessel traffic service system; and
    - (iv) all other relevant costs and data.
- (2) REPORT- Not later than 1 year after the date of the enactment of this Act, the Secretary shall submit to the Congress a report on the results of the study conducted under paragraph (1) and recommendations for implementing the results of that study.

The Port Needs Study, as required by OPA 90, was delivered to congress in March 1992. It evaluated 82 deep-draft ports in 23 selected areas that load or unload 80 percent of the total U.S. cargo, Prince William Sound (the site of the Valdez oil spill) was not included in the study because Congress had already legislated in OPA 90 to improve and expand its VTS. The study revealed substantial benefit from the operation of a VTS in seven study zones: Boston, MA; Corpus Christi, TX; Houston/Galveston, TX; Los Angeles/Long Beach, CA; Mobile AL; New Orleans, LA; and Port Arthur, TX. The Coast Guard already operated a VTS in Houston/Galveston and several other locations at that time. The report further prioritized 17 other locations for the establishment of VTS's.

The Port Needs Study laid the groundwork for the VTS 2000 initiative. VTS 2000 was a plan to implement the findings of the Port Needs Study and establish VTS's in the 17 port areas without VTS's and expand and improve the existing VTS installations. The cost estimate of VTS 2000 was initially \$260 million to \$310 million with approximately \$42 million in federal funds of operations each year. In April 1996 the Government Accountability Office (GAO) testified before Congress regarding the status of VTS 2000. In their testimony the GAO cited that system's benefits had not been demonstrated in ports under consideration, final costs uncertain, support for VTS 2000 not widespread among key stakeholders. Most importantly the GAO reported that more cost effective solutions to VTS 2000 systems and alternative forms of VTS exist. In September 1996 Congress terminated funding for VTS 2000.

OPA 90 and the Port Needs Study also led to the promulgation of the VTS National Regulations (33 CFR 161) which were promulgated in the Federal Register on July 15, 1994 and effective October 13, 1994. These regulations made VTS participation mandatory.

## **PORTS AND WATERWAY SAFETY ASSESSMENT**

The 1997 Appropriations Bill, directed the Coast Guard “to identify minimum user requirements for new VTS systems in consultation with local officials, waterways users and port authorities” and also to review private / public partnership opportunities in VTS operations. As a result of this Congressional direction, the USCG established the Ports and Waterways Safety System (PAWSS) to address waterway user needs and place a greater emphasis on partnerships with industry to reduce risk in the marine environment.

As part of PAWSS, the USCG immediately convened a national dialogue group comprised of maritime and waterway community stakeholders to identify the needs of waterway users with respect to Vessel Traffic Management (VTM) and VTS systems. Those stakeholders, representing all major sectors of the U.S. and foreign-flag maritime industry, port authorities, pilots, the environmental community, and the USCG, were tasked to:

1. Identify the information needs of waterway users to ensure safe passage;
2. Assist in establishing a process to identify candidate waterways for VTM improvements and VTS installations; and
3. Identify the basic elements of a VTS.

The NDG was intended to provide the foundation for the development of an approach to VTM that would meet the shared government, industry, and public objective of ensuring the safety of vessel traffic in U.S. ports and waterways, in a technologically sound and cost effective way.

Work done by the NDG led to the development of the Ports And Waterways Safety Assessment (PAWSA) process, which was established to open a dialogue with waterway users and stakeholders to identify needed VTM improvements and to determine candidate VTS waterways. PAWSA provides a formal structure for identifying risk factors and evaluating potential mitigation measures through expert inputs. The process requires the participation of professional waterway users with local expertise in navigation, waterway conditions, and port safety. In addition, stakeholders are included in the process to ensure that important environmental, public safety, and economic consequences are given appropriate attention as risk interventions are selected. Over 35 ports / waterways have completed the PAWSA process, which generally has been well received by local maritime communities and has resulted in some resounding successes. The ultimate goal of PAWSA is not only to establish a baseline of waterways for VTS consideration, but to provide the local host and waterway community with an effective tool to evaluate risk and work toward long term solutions tailored to local circumstances. The goal is to find solutions that are both cost effective and meet the needs of waterway users and stakeholders.

The Houston/Galveston Port complexes' PAWSA Port Risk Assessment was conducted on January 25 and 26, 2000. The PAWSA Workshop was conducted on July 14 and 15, 2009. The final reports of both can be found at <http://www.navcen.uscg.gov>.

## **MARITIME TRANSPORTATION SECURITY ACT OF 2002 (MTSA)**

On September 11, 2001, members of the Al Qaeda terrorist network seized control of 4 airliners, and in a series of coordinated suicide attacks flew them into the World Trade Center buildings in New York, the Pentagon in Washington D.C. and the fourth was defended by the passengers and

downed in an unpopulated field in Pennsylvania. A total of 2,996 people lost their lives in the attack, including 411 emergency workers.

Once again Congress acted quickly to secure the nation and prevent terrorist activity in the homeland, among other actions the Maritime Transportation Security Act of 2002 (MTSA) was passed and signed by the President on November 25, 2002.

The Maritime Transportation Security Act amended the Ports and Waterways Safety Act to include "...security of United States Ports and Waterways." The Act also requires vessels and waterfront facilities to maintain certain security practices and plans as well as subjects them to security inspections. The MTSA also accelerated the phase in period for Automatic Identification Systems (AIS) carriage requirements as well as additional carriage requirements for vessels operating on the navigable waters of the United States. It also extended through FY 2005 the termination dates of the Houston-Galveston Navigation Safety Advisory Committee.

## VTS HOUSTON/GALVESTON TIMELINE

- 1972 July 19; Houston Vessel Traffic System Advisory Committee chartered.
- 1975 February 4; Vessel Traffic Service Houston/Galveston commissioned. Using Radar, Closed Circuit Cameras, and VHF-FM Communications; moved colored cards along a slotted board to monitor and track vessel movements. Participation was voluntary
- 1976 Lockheed's Data Acquisition and Control System (DACS) first computerized vessel tracking system. Since there was no sensor input, operators still had to manipulate tracks to maintain accurate display.
- 1992 DACS decommissioned, returned to manual board operations. EER Vessel Tracking Computer delivered. EER decommissioned.
- 1994 October 13; VTS National Regulations (33 CFR 161) effective, VTS Participation mandatory.
- 2001 April; CGVTS commissioned, graphical vessel tracking system.
- 2005 April; PAWSS commissioned. Graphical vessel tracking system with AIS, and Radar input for automated tracking.
- December 15; Sector Houston-Galveston commissioned, VTS aligned within Sector construct.
- 2008 The damage caused by Hurricane IKE to Coast Guard facilities in September of 2008 negatively impacted Coast Guard missions throughout Sector Houston Galveston (HG).
- 2010 An Execution Proposal was approved by CG-8 in June of 2010 to relocate Sector HG from Galena Park to Ellington Field to fix a 60,000 SF basic facility requirement deficiency and address the vulnerability of the existing Sector facility built in 1971 to Hurricane forces. The project request for proposal was issued in February of 2011 and the project was awarded in June of 2011.
- 2012 January 31, 2012: Broke Ground at Sector Houston/Galveston, Texas.
- 2014 February 10, 2014: 1030 cut over the VTS watch from Galena Park to Ellington.
- March 10, 2014: Sector Houston-Galveston Maritime Interagency Operation Center Ribbon Cutting Ceremony.  
Remarks by: Rear Admiral Kevin S. Cook; Commander Eighth Coast Guard District  
Remarks by: Captain Brian K. Penoyer; COTP, Sector Commander  
Official Proclamation Ribbon Cutting: Cindy Harld
- March 22 - Collision of the M/V SUMMER WIND and Kirby Barge 27706 resulting in a major spill of bunker fuel.